(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property **Organization**

International Bureau





(43) International Publication Date 18 November 2004 (18.11.2004)

PCT

(10) International Publication Number WO 2004/099262 A1

- (51) International Patent Classification7: C07C 49/83
- C08F 2/50,
- (21) International Application Number:

PCT/EP2004/050689

(22) International Filing Date:

4 May 2004 (04.05.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

03405318.1

6 May 2003 (06.05.2003)

(71) Applicant (for all designated States except US): CIBA

SPECIALTY CHEMICALS HOLDING INC. [CH/CH];

Klybeckstrasse 141, CH-4057 Basel (CH).

(72) Inventors; and

(75) Inventors/Applicants (for US only): SOMMERLADE, Reinhard H. [DE/DE]; Rheinfeldener Strasse 27, 79395 Neuenburg am Rhein (DE). HÜSLER, Rinaldo [CH/CH]; Näfelserstrasse 41, CH-4055 Basel (CH). ILG, Stephan [CH/CH]; Moosmattstrasse 93, CH-4304 Giebenach (CH). FUCHS, André [DE/DE]; Im Kirschgarten 19, 79418 Schliengen-Obereggenen (DE). BOULMAÂZ, Souâd [MA/CH]; Am Stausee 27/13, CH-4127 Birsfelden (CH). BIRBAUM, Jean-Luc [CH/CH]; Bruderholzstrasse 17, CH-4102 Binningen (CH).

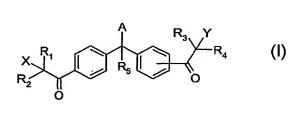
- (74) Common Representative: CIBA SPECIALTY CHEM-ICALS HOLDING INC.; Patent Department, Klybeckstrasse 141, CH-4057 Basel (CH).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI. GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM). European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: NOVEL TRIFUNCTIONAL PHOTOINITIATORS



$$\begin{bmatrix}
R_1 & O \\
X & R_2
\end{bmatrix}$$

$$R_5 & A' & R_6$$

$$Y & R_3$$

$$R_4 & O$$

(57) Abstract: The Invention relates to novel ketones of formulae (I) and (II) wherein R₁, R₂, R₃ and R₄ are, for example, C₁-C₈alkyl, R₅ is, for example, hydrogen, A is CI, Br, -0-R₇, -NR₈R₉ or -S-R₁₆, A' is -O-, -NH- or -NR₈-, X and Y are each independently of the other -O-R₁₀ or -N(R₁₁)(R₁₂), n is an integer from 1 to 10, R₆ is, for example, an n-valent radical of linear or branched C2-C20alkyl the carbon chain of which may be interrupted by cyclohexanediyl, phenylene, -CH(OH)-, -C(C2H5)(CH2-CH2-OH)-, $-P(O)(CH_2-CH_2-OH)-, -0-P(O-CH_2-CH_2-OH)-O-, -0-P(O)(0-CH_2-CH_2-OH)-O-, -0-cyclohexaned iyl-C(CH_3)_2-Cyclohexaned iyl-O-, -0-cyclohexaned iyl-O-$ -O-phenylene-C(CH₃)₂-phenylene-O-, -O-phenylene-CH₂-phenylene-O-, -Si(CH₃)₂-, -0-Si(CH₃)₂-O-, -O-Si(CH₃)(0-CH₃)-O-, -Si(CH₃)(R₁₇)-O-Si(CH₃)(R₁₈)-, 5-(2-hydroxyethyl)-[1,3,5]triazinane-2,4,6-trione-1,3-diyl and/or by from one to nine oxygen atoms.

